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the specification deletions are shown by strikeout. Please enter the replacement specification paragraphs into the record of this case.

In the Claims:

Please amend claims 1, 2, 4 and 6 as follows in which the claim additions are shown by underlining and/or the claim deletions are shown by strikeout or brackets. Please enter the amended claims into the record of this case.

[024A] Fig. 1A and 1B are a schematic diagram of the accumulator system of the present invention of Fig. 1;

[025] Figs. 2 and 3 are block diagrams of the hydraulic system and transmission of a vehicle incorporating an auxiliary hydraulic drive system of the present invention[[]]; and

[025A] Fig. 4 is a schematic representation of hydraulic system transmission of a vehicle incorporating another embodiment of the accumulator system of the present invention.

[039] It will also be recognized and understood by those of ordinary skill in the relevant arts that an Accumulator Reserve System 48 of the present invention may be implemented in other forms, depending upon the requirements of the vehicle, Hydraulic System 12 and Transmission 26. For example, Accumulator Controller 56 and Accumulator Control Valve 52 may be implemented as a self-controlling Accumulator Control Valve 58 wherein the flow of Hydraulic Fluid 12 through Accumulator Control Valve 58 in either direction is dependent upon a Differential Pressure 60 across Accumulator Control Valve 58. As seen in Figs. 1A and 1B, the valve controller can include a spring biased bidirectional valve controller and positive and negative adjustable bias springs 56a and 56b.

1. (CURRENTLY AMENDED) A hydraulic pressure reserve system for a vehicle hydraulic system including a primary hydraulic circuit including a hydraulic pump and a hydraulic sump and providing hydraulic pressure to at least a hydraulically actuated transmission, the hydraulic pressure reserve system comprising:

an accumulator tank connected from the primary hydraulic circuit for storing a reserve of hydraulic fluid at an accumulator pressure, and

an accumulator control valve for controlling a flow of hydraulic fluid between the primary hydraulic circuit and the accumulator tank, and

an accumulator controller responsive to a primary hydraulic circuit pressure and to the accumulator pressure for controlling the accumulator control valve, wherein

the accumulator controller actuates the accumulator control valve to allow a flow of the hydraulic fluid from the primary hydraulic circuit and into the accumulator tank when the primary hydraulic circuit pressure is greater than the accumulator pressure, and

the accumulator controller actuates the accumulator control valve to allow a flow of the hydraulic fluid from the accumulator tank to the primary hydraulic circuit when the primary hydraulic circuit pressure is lower than a desired minimum primary hydraulic circuit pressure, thereby raising the primary hydraulic circuit pressure towards [[a]] the desired primary hydraulic circuit pressure. ◆

2. (CURRENTLY AMENDED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 1 wherein:

the accumulator control valve includes a bidirectional valve allowing a bidirectional flow of hydraulic fluid between the accumulator tank and the primary circuit, and

the accumulator controller includes a spring biased bidirectional valve controller actuating the bidirectional valve dependent upon a differential pressure across the valve controller between the primary circuit and the accumulator tank, such that

when there is a positive differential pressure across the bidirectional valve controller wherein the primary circuit hydraulic pressure is greater than the accumulator pressure [[be]] by greater than a selected positive actuation ◆

pressure, the bidirectional valve is opened by the bidirectional valve controller to allow the hydraulic fluid to ~~[[from]]~~ flow into the accumulator tank and the accumulator pressure to rise accordingly, and

when there is a negative differential pressure across the bidirectional valve controller wherein the primary circuit pressure is less than the accumulator pressure by greater than a selected negative actuation pressure, the bidirectional valve is opened by the bidirectional valve controller to allow the hydraulic fluid to flow from the accumulator tank to the primary circuit, thereby raising the primary hydraulic circuit pressure towards a desired primary hydraulic circuit pressure.

3. (PREVIOUSLY PRESENTED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 2 wherein:

the magnitude of the positive actuation pressure is less than the magnitude of the negative actuation pressure.

4. (CURRENTLY AMENDED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 2 wherein:

~~wherein~~ the bidirectional valve controller includes positive and negative adjustable bias springs acting upon the bidirectional valve.

5. (PREVIOUSLY PRESENTED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 4 wherein:

the positive and negative actuation pressures are selected to provide hysteresis in opening and closing of the bidirectional valve.

6. (CURRENTLY AMENDED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 1 wherein:

a first accumulator control valve and a corresponding first accumulator controller connected from the primary circuit and to the accumulator tank ~~[[for]]~~ controlling the flow of hydraulic fluid from the primary hydraulic circuit and to accumulator tank, and

a second accumulator control valve and a corresponding second accumulator controller connected from the primary circuit and to the accumulator controller for in parallel with the first accumulator control valve and the first accumulator controller for controlling the flow of hydraulic fluid from the accumulator tank and to the primary hydraulic circuit.

7. (PREVIOUSLY PRESENTED) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 1, further comprising:

a primary gearset including a primary gear connected from a primary drive and driving a secondary gear,

an auxiliary gearset including an auxiliary primary gear connected from an auxiliary drive and driving an auxiliary secondary gear,

a primary drive clutch connected from the secondary gear for connecting the secondary gear to drive the hydraulic pump when the primary drive clutch is actuated,

an auxiliary drive clutch connected from the auxiliary secondary gear for connecting the auxiliary secondary gear to drive the hydraulic pump when the auxiliary drive clutch is actuated.

8. (ORIGINAL) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 7, further comprising:

a hydraulic drive controller responsive to a hydraulic pressure of the hydraulic system to

disengage the primary drive clutch and engage the auxiliary drive clutch when the hydraulic pressure of the hydraulic system is less than a selected minimum pressure, and

engage the primary drive clutch and disengage the auxiliary drive clutch when the hydraulic pressure of the hydraulic system is greater than a selected operating pressure.

9. (ORIGINAL) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 7, wherein:

the primary and secondary drive gears are engaged through a drive chain.

10. (ORIGINAL) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 7, wherein:

the auxiliary primary and secondary drive gears are engaged through a shared drive chain.

11. (PREVIOUSLY PRESENTED) The hydraulic pressure reserve system of claim 1, further comprising:

a primary gear connected from a primary drive by a primary drive clutch,

an auxiliary primary gear connected from an auxiliary drive by an auxiliary drive clutch, and

a secondary gear engaged with the primary gear and the auxiliary primary gear and connected to drive the pump,

the primary drive driving the hydraulic pump through the primary gear and the secondary gear when the primary drive clutch is actuated, and

the auxiliary drive driving the hydraulic pump through the auxiliary primary gear and the secondary gear when the auxiliary drive clutch is actuated.

12. (ORIGINAL) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 11, further comprising:

a hydraulic drive controller responsive to a hydraulic pressure of the hydraulic system to

disengage the primary drive clutch and engage the auxiliary drive clutch when the hydraulic pressure of the hydraulic system is less than a selected minimum pressure, and

engage the primary drive clutch and disengage the auxiliary drive clutch when the hydraulic pressure of the hydraulic system is greater than a selected operating pressure.

13. (ORIGINAL) The hydraulic pressure reserve system for a vehicle hydraulic system of claim 11, wherein:

the primary, auxiliary primary and secondary drive gears are mutually engaged through a shared drive chain.